

# An Appraisal of Urban Infrastructure and Amenities: A Case Study of Gayeshpur Municipality of Nadia District

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**Abstract:** *It is right time to look into the urban infrastructure facilities as the rapid pace of urbanization is set to be continued across the world by various factor such as migration and natural growth. Urban centers across country are full of constraint in the sectors of water supply, waste water management, storm water and drainages and solid waste management as well as social infrastructure facilities such as health facilities, education facility, banks, and so on. This paper is identified the towns in Gayeshpur and examined infrastructure facilities status. The first objective of this paper is to identify towns in Gayeshpur based on the 2001 census. The second objective is to examine the status of physical and social infrastructure facilities and compare it to the benchmarks of urban services which were documented by government of India and finally draw useful inference for sustaining growth of towns in Gayeshpur. The research methodology was adopted through statistical reports of Gayeshpur and data available to public domain from various line agencies. The research tools and techniques used for the analysis of data are GIS arch, MS Excel and so on.*

**Keywords:** Infrastructure, Amenities, Water Supply, Solid Waste Management, Storm Water and Drainage, Education and Health facility.

## 1. Introduction

Gayeshpur was declared as a notified area on 1<sup>st</sup> September 1979. Earlier the area was practically under no administrative jurisdiction and was attached with Saguna Gram Panchayat, which itself had a questionable existence. After Independence, a colony was set up in this forestland under the financial assistance of the Refugee Rehabilitation Department of the state of West Bengal. Gayeshpur Notified Area has been elevated to a Municipality- Status in the year of 1995. According to 2011 Census of India, Gayeshpur municipality has a spatial extent of 30 sq. km. with a population of 58,998.

Gayeshpur municipality is bounded in its north west by Kalyani Municipality and in its south by Mathura Beel. Saguna Gram Panchayat area starts at its northern boundary and its southwestern boundary is delimited partially by the river Hooghly and the rest by the Kanchrapara Municipal Boundary.

Gayeshpur municipality is located in the northern fringe of the Kolkata Metropolitan District and is at about 72 kilometers north of Kolkata. It is accessed by two State highways. The eastern side approach is through National Highways 34, and the western side through Delhi Road. Further, Gayeshpur is linked through suburban railways having two Railway stations in its vicinity. Kalyani Railway

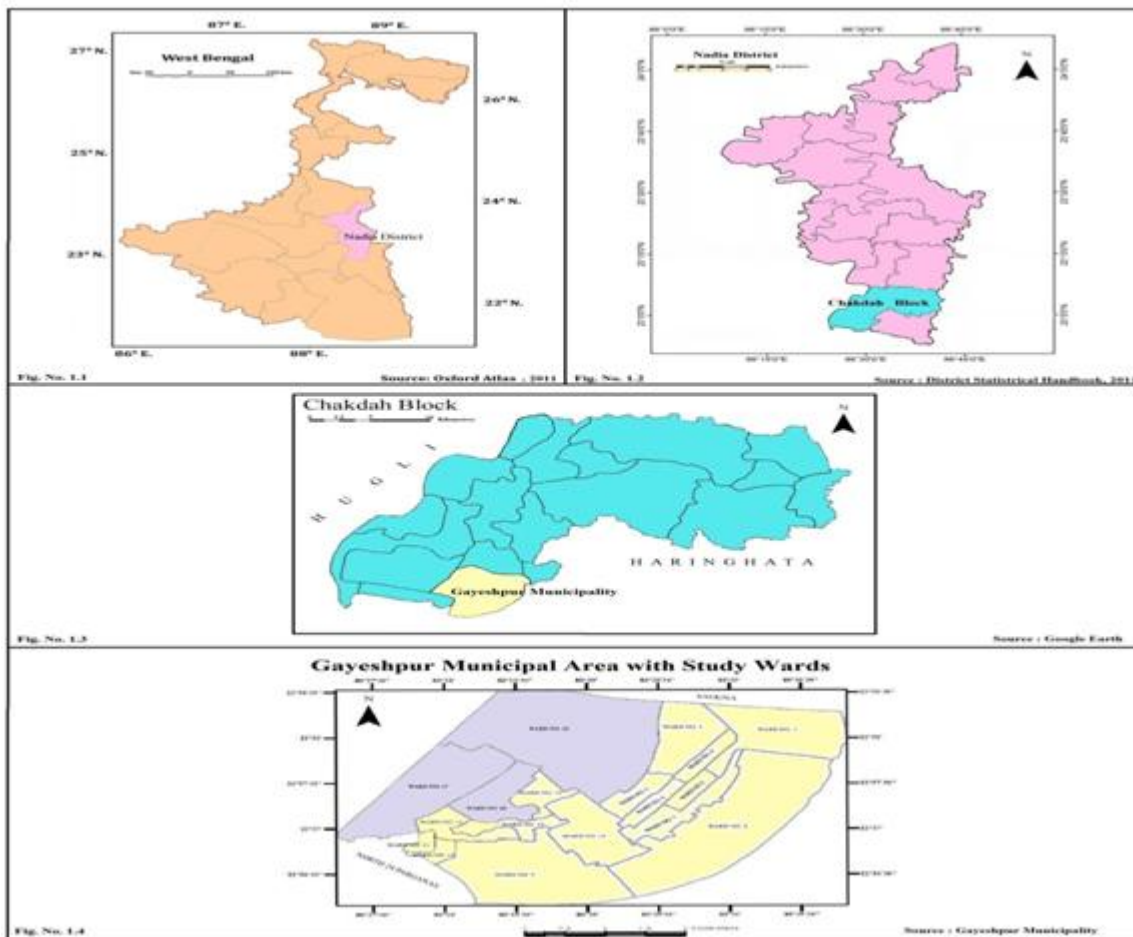
Station lies at its periphery in the north-west, and Kanchrapara railway station in the west.

## 2. Objectives

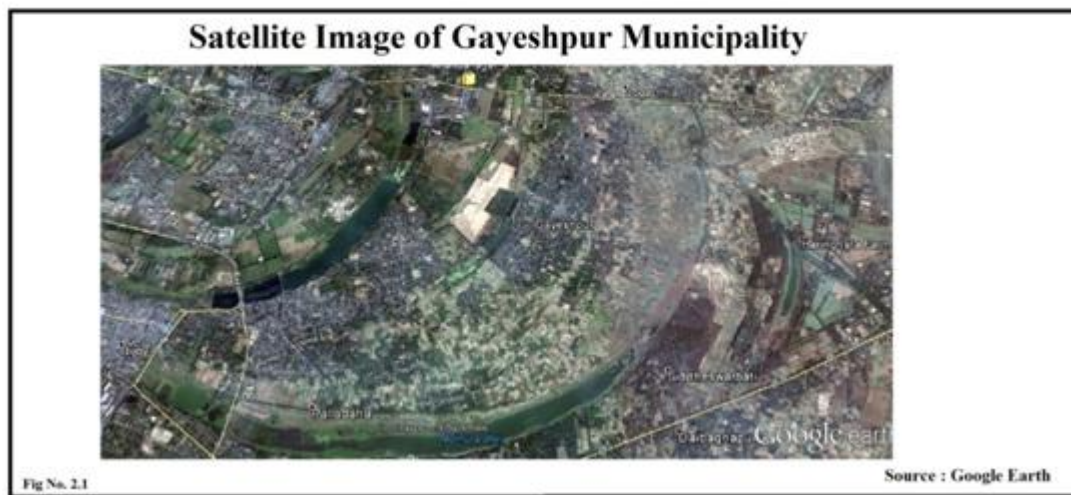
Here an attempt has been made to evaluate as well as corroborate the condition of urban Infrastructure and Amenities in Gayeshpur Municipality within the District of Nadia. Actually, Gayeshpur Municipality is a newly constructed municipality in the entire Nadia district and that is why the analyses of its various infrastructural components in terms of water supply, road network, electrification, sewerage and solid waste management system and other facilities encompassing parks, amusement outlets, shopping plaza etc on the study arena will be an interesting assignment. The main objectives behind the study are as follows:-

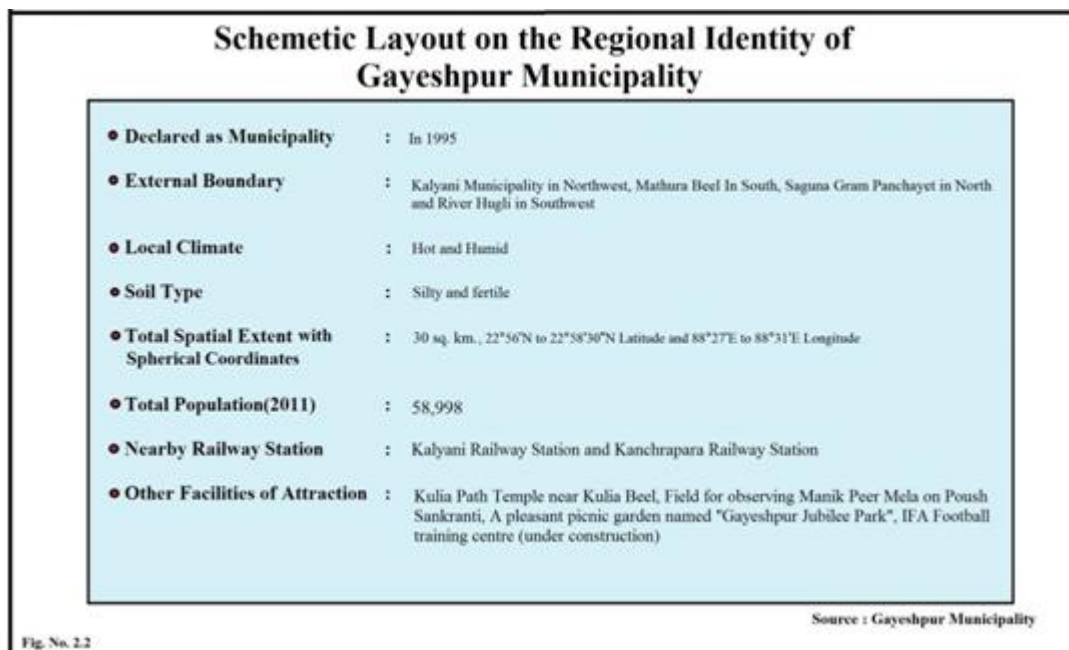
- 1) To identify what types of infrastructural facilities available at this municipal area.
- 2) To depict the distribution of infrastructural facilities in different micro wards of the entire Municipality.
- 3) To identify the present developing stages of infrastructural services and to some extent some specific urban amenities in the Gayeshpur Municipality.
- 4) To enumerate the present amenities accessed by the inhabitants of Gayeshpur Municipality.
- 5) To find out the major problems of municipal services in all the wards.

## LOCATION OF THE STUDY AREA



## STUDY AREA AT A GLANCE





### 3. Infrastructure and Amenities of Gayeshpur Municipality

Here an attempt has been made to assess the infrastructural profile as well as the profile of Urban Amenities in Gayeshpur Municipality of Nadia district. First of all, with the help of choropleth map and bar diagram the total number of population has been shown in different wards of Gayeshpur Municipality. Ward no 11 and 13 are having almost highest population density because the wards are having good infrastructural facilities. Ward no. 18 and 9 have lowest population than all other wards of Gayeshpur Municipality.

#### Water supply

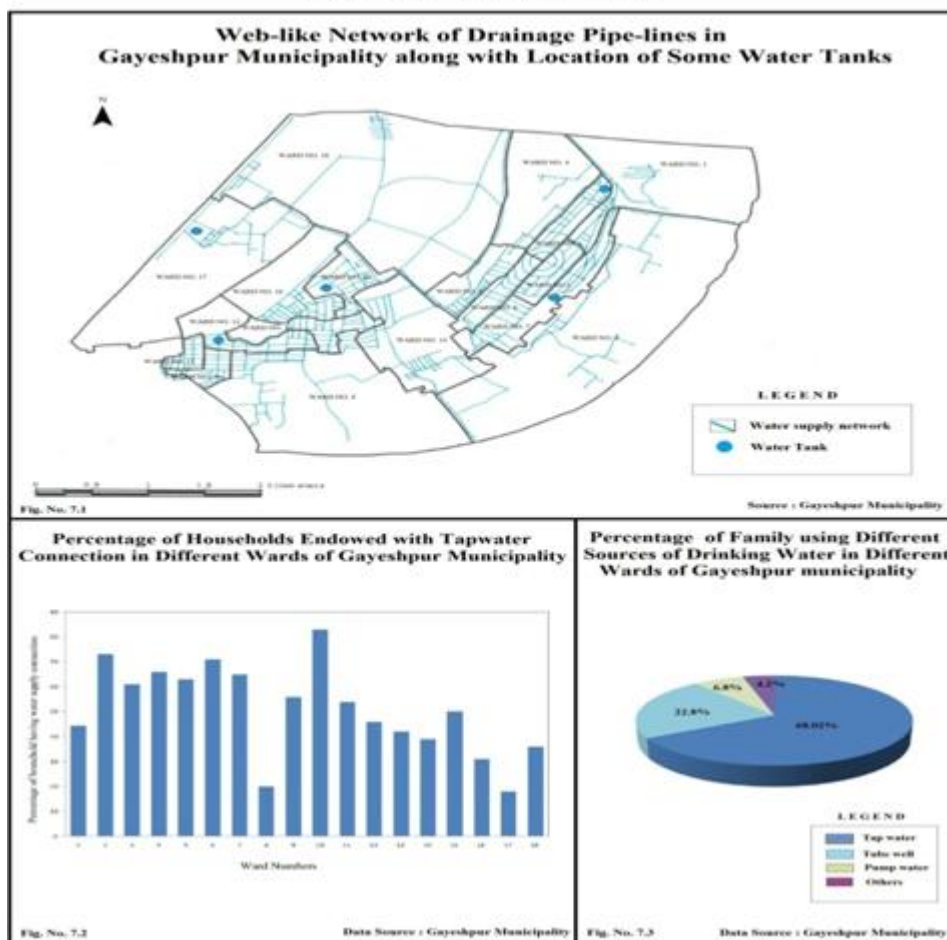
The source of existing water supply system is ground water withdrawn from 16 pumping stations distributed all over the municipal area. There is only one stand by pump in the entire Municipality. Any major break down may cause complete disruption in water supply here. There are only two overhead reservoirs and their structural conditions are very poor. AC pipes constitute major portion of the water supply pipe network. All these AC pipes should be replaced because these are not allowable in the water supply network from the point of view of hygiene, leakage in supply and recurring cost of repair and maintenance. It can be concluded that the water supply system in Gayeshpur municipal area should be planned fresh to meet the existing lacunae, future demand and the objectives set by the municipality. Presently the domestic water supply

connection through Municipal pipe lines is fulfilling 83% demand of water by the Municipal inhabitants. Ward wise quantity of water supply per Capita per day is 135 liter. In the Gayeshpur Municipal area, ward numbers 10, 2, 6, 4 are having most of the water supply system connected with the main municipal reservoirs and Ward number 3,5,7,9 have medium number of houses getting connected with municipal water supply through poorly-designed pipe line. But ward number 17, 16 and 18 are having low number of household getting water supply facilities.

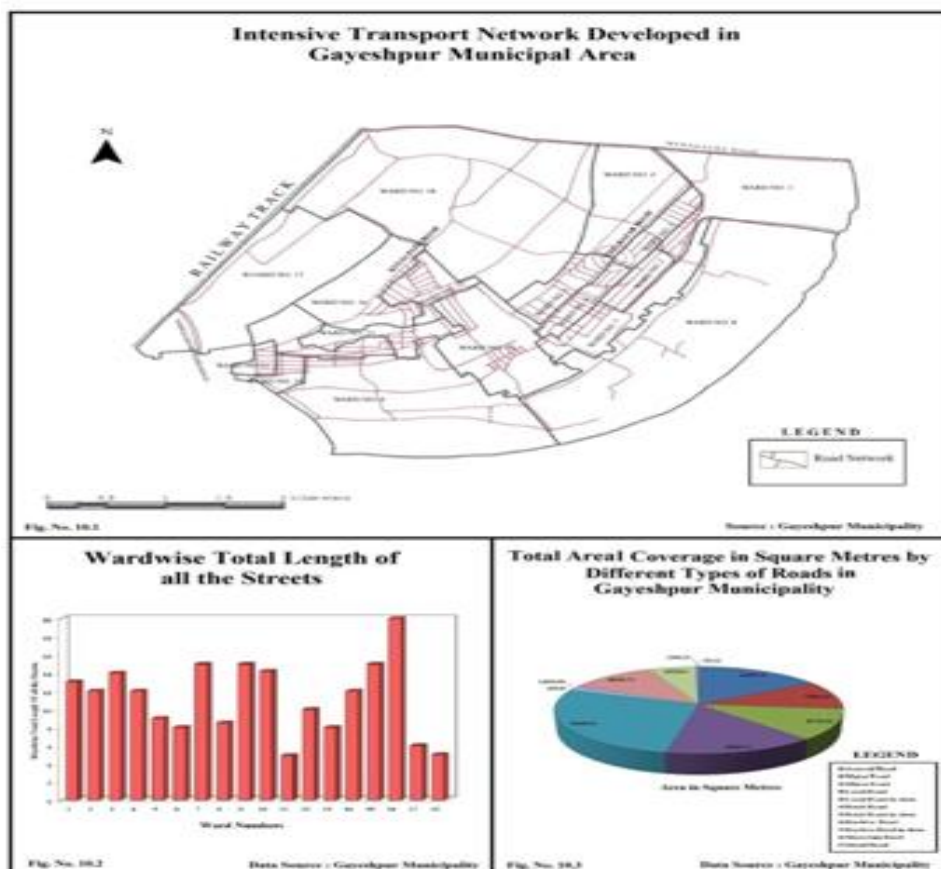
#### Drainage and Sullage

The municipal areas are connected telescopically with drains of higher capacity and connected to the nearest points of the Nayanjuli Canal and Beel system. In Gayeshpur Municipal area, every ward is having covered drainage network to maintain waste water and sullage Disposal. The percentage of area covered on an average is 36.88. Maximum coverage is 45%, which is identified in ward number 18, 7 and 8. The drainage condition of Gayeshpur Municipality area are of four types- kutchha without cover, kutchha with cover, pucca without cover and pucca with cover. Most of the drains are pucca without cover in type. 44.6 percent drains' condition is pucca without cover. 32.84 percent drains are pucca with cover. Only 10.38 percent drains are totally kutchha.

## NETWORK OF PIPE-LINES



## ROAD INFRASTRUCTURE



## Road

The Kalyani Barrackpore Expressway runs very close to the South-western boundary of Gayeshpur Municipality. Mooragacha Road runs along the Northern boundary of the Municipality and provides a rail to road connection. These two roads are of higher order and provide the municipal area considerably high accessibility from and to far away destinations, origins, and can act as catalysts of accelerated development of Gayeshpur. Netaji Subhash Road, the spine and an arterial road run across the municipal area connecting the major inhabited locations. The Gayeshpur Municipality has total 201.6 km road in total area of the wards. Ward number 16, 15 and 9 have better road network than the other wards.

## Sewerage and sanitation

Collection and disposal of sewage from living areas and urban waste from manufacturing area is essential to maintain healthy living conditions in the city. But there is no sewerage network in Gayeshpur Municipal area. In Gayeshpur Municipal area there is no scientific or planned sewerage system, so sanitary system based on septic tanks for all is a need of hour. The total wards of the Gayeshpur municipality have 60.27 percent of households covered with septic tanks in average. The maximum 75 percent households are covered at ward number 12 and 16 with this particular facility. 35 percent households have septic tanks in ward number 17 and the figure is minimum for the entire Municipality. The types of the sanitary latrines of the municipality are mainly pucca and the percentage of coverage is 59% on an average. 30 percent latrines are semi pucca and 11 percent latrines are kutcha by type.

## Solid Waste

The modern method of solid waste management System with two bin- handcarts- Dumper is present here. Solid Waste treatment Plant providing the segregation of organic and inorganic wastes at source and a techno economically feasible system should be planned and installed to provide the citizen of Gayeshpur Municipality a pollution free modern living. From data of Draft development plan (DDP) of Gayeshpur Municipality 2007-2012 it is identified that the total solid waste generation per day is 29.309 meter and ward wise average solid waste generation is 1.628 meter per

day in the Gayeshpur Municipality area. Ward Number 16 and 17 generate most of the solid waste. Gayeshpur municipality provides 60% solid waste collection system in every ward on an average.

## Education

The Primary schools of the Gayeshpur Municipality area has been encompassed with a primary survey conducted by the Gayeshpur Municipality to ascertain standards of physical infrastructure and the basic needs. Gayeshpur Municipality possesses 25 Govt. Aided Free Primary schools located at different wards, 2 junior High Schools, 7 Madhyamik Schools, 6 Higher Secondary Schools and 5 nos. of Sarva Shiksha Kendras. Primary Survey has been conducted in the Schools by the municipality for the purpose of identification of the gap in the education sector and to ascertain the demand for pre-primary schools within the municipality.

## Health

The ULB (Urban Local Bodies) has a hierarchy of healthcare services in which the apex position is held by the municipal hospital (Matri Sadan), Gandhi Memorial hospital and Netaji Subhas T.B. Sanatorium. Gayeshpur Municipality carries out the national health-care programmes under UHIP (Universal Health Improvement Project). Apart from the apex municipal hospital, there are thirteen (13) nos. of health centres distributed in various locations of the different wards of Gayeshpur municipal area. There are 5 Sub-health centres and 9 dispensaries in the municipal area.

## Urban Amenities in Gayeshpur Municipality

In this Municipality area, there are 5 markets. The markets should be equitably distributed all over the municipal area considering the population density and accessibility. There are two banks identified in ward number 6 and ward number 16. In the ward number 6, at the Golbazar, there is a state bank's branch and the other one is united bank situated at Gokulpur in ward number 16. One football cum cricket stadium is constructed in ward number 14. There is only one crematorium in Gayeshpur and it needs immediate renovation. There is no fire station in the Gayeshpur Municipality area. Almost all the wards in the Gayeshpur Municipality have reported regarding insufficient green areas in their localities.



#### 4. Major Findings and Concluding Remarks

After the analysis of primary and secondary databases regarding the infrastructural details of Gayeshpur Municipality in district Nadia, some problems have come in the fore front and those problems have been enlisted below.

- 1) Open drainage and its irregular cleaning.
- 2) In some wards drain-water is falling into the ponds and the pond-water is getting contaminated and also they are creating foul smell.
- 3) Water supply is not regular in some wards of Gayeshpur Municipality.
- 4) Water pollution due to linkage of pipe line and irregular cleaning is a matter of serious concern.
- 5) In wards number 17 and 18 water supplied is not purified and healthy.
- 6) In the ward number 16, 17 and some other wards roads are broken and at the same time, they have sufficient road system. The maintenance of those roads is very poor.
- 7) There is no fire Station in the entire Municipality and the crematorium needs immediate renovation.

#### 5. Suggestions

- 1) Proper measure needs to be taken to stop the disposal of drain water into the pond.
- 2) Regular cleaning of the garbage-disposal bins and stopping of indiscriminate garbage disposal by construction of vats are dire needs in Gayeshpur.
- 3) Construction of pucca drains in the areas of drainage problem is a prime necessity.

- 4) Leakage of pipelines to be monitored and repaired urgently and regular maintenance of reservoirs is also needed.
- 5) Regular cleaning of drains is needed.
- 6) Measures to supply purified and arsenic free water to be undertaken.
- 7) Facilities like see saw, slip swing have to be provided at the children's' park to make it a model park in the locality.

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